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ABSTRACT

A study attempted to describe visitors' psychological functioning while viewing museum exhibits. The research was designed to enable a comparison of psychological functioning as viewed by subjects and a researcher. Two sets of data were gathered, the first with 45 visitors (men and women, 25-65 years of age, with various educational levels) to a natural history museum and the second with 90 similar visitors to a fine arts museum, a museum of history and ethnology, and a museum of natural sciences. The two sets of data were gathered by researchers by following subjects and recording their experiences as they described them, then conducting a structured interview with the subjects in which they describe the visit and how it benefited them. The oral material was typed and studied through content analysis of 12 operations. Some results of the study were the following: (1) the most prevalent psychological operations were taking note of, identifying, and explaining-justifying; (2) cognitive functioning is much more prevalent than affective functioning; (3) visitors who go to museums more frequently understand objects more easily; and (4) visitors' questions reflect a cognitive and emotional engagement that gets blocked when they fail to receive answers. The study concluded that visitors are not passive when they look at exhibits and that this information should be used in the design of museum education. The study also produced an instrument shown to be useful in determining psychological functioning. (KC)

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ADULT EPISTEMIC BEHAVIOR AT THE MUSEUM

Implications for Museum Education[1]

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TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

To a serious researcher, the study of adult education in a museum might be considered a useless venture, a whim undeserving of attention. Research in this field is, however justified, considering the importance of the museum's educational role and the increase in the number of museums, mainly as a result of investments made by Western states.[2] In addition, the exhibit hall is one of the most favourable places for the study of the spontaneous psychological functioning of an adult.

Making the museum a center for adult education is not without problems. Teaching in an exhibit hall is not the same as teaching in a classroom. Few visitors have, as does the student, a clear goal of learning or acquiring training. The classroom situation is very different from that of the museum. However, the body of knowledge on education that is specific to the museum is very limited. At present, for lack of better resources, the museum borrows its theories and most of its methods from the academic sphere.

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1 This research was funded by the Fonds pour la formation de chercheurs et l'aide à la recherche of the Québec Government, by the Social Sciences and Humanities Research Council of Canada and by the Université de Montréal.

2 For briefness sake, this text does not make any reference to research done by others. These references appear in a document that is currently being published.

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The most popular theory, as far as the museum educator is concerned, is behaviorism. However, this theory puts him in an unnacceptable position: that of being able to consider only the effects of what he has attempted to do and assessing only the learning or the changes in attitude which he has tried to bring about, whereas the visitor, as he well knows, learns a wide variety of things.

The phenomenological approach seems attractive to the educator as an alternative. Nevertheless, this approach puts him in an equally difficult position since there are no two visitors who have the same psychological functioning, given that both have different experiences and knowledge. We cannot therefore conceive of a method that can satisfy more than one person at the same time.

The research team that I direct has tried to obtain empirical data which would allow the development of a more satisfactory approach than the two previous ones. These data are based on the psychological functioning of a visitor who is on his own in the exhibit hall. I have chosen the visit scenario itself rather than one involving educational programme participation because the exhibition is central to museum activity.

To begin with, I will give an account of what is known about the research done on the museum visitor, clarify the purpose of the study carried out by my team, describe briefly the study, present some of its results and outline an educational approach coherent with these results.

THE STATE OF RESEARCH ON THE VISITOR

Considerable information is available on the socio-cultural characteristics of museum clientele. Every western country and even every important museum keep detailed statistics on

who goes to the museum and who does not. There are also studies on the visitors' expectations, on his behavior in the exhibit hall. It has even been possible to establish which exhibits attract visitors, which hold their attention and how much time is spent looking at the most appealing ones. But up to now, the visitor's experience, in other words, his psychological functioning while he observes objects in the museum has not been studied.

PURPOSE OF THE STUDY

The visitor's psychological functioning is private and secret. Its study required therefore three conditions. Firstly, gaining access to it. Secondly, developing instruments for its study, and finally, acquiring an understanding of the context in which it operates in order to give meaning to it.

Psychological functioning, as I understand it, is not a global entity which can be extracted from a set of data; it is not a residue of a series of manipulations. Psychological functioning constitutes a series of mental operations, captured as they occur, which the visitor carries out in order to make sense out of his experiences.

DESCRIPTION OF THE INVESTIGATION

The research was designed in a way that would enable a comparison of psychological functioning as viewed by the subject under study on the one hand, and the researcher on the other. The purpose of this comparison is neither to modify, nor to correct the researcher's

perception, but to understand the difference between the two perspectives and, if possible, explain it.

More precisely, we found that if an adult is asked to describe what he sees, thinks, feels or imagines as he walks through the exhibit hall, one can construe his psychological functioning from the remarks he makes. A topical analysis shows how this functioning is structured, a sequential analysis reveals its organisation in time (which is a sort of a procedure) and, to a certain extent, provides an explanation of the particular form that this organisation takes.

Furthermore, a projective instrument and a well structured conversation can reveal the individual's perception of his own psychological functioning, how he explains it and the benefits he has derived from the visit.

As of now, two sets of data have been gathered. The first study which was conducted in a natural history museum (Université de Montréal's Georges Préfontaine Museum) was based on 45 visitors. The group consisted of both men and women, 25 to 65 years of age, with three different levels of education and three different types of museum visiting habits. The second focused on 90 subjects with similar characteristics to the former group. This group visited three different types of museums, namely: a fine arts museum (le Musée des beaux-arts de Montréal), a museum of history and ethnology (The Musée M. Stewart) and a museum of natural sciences (le Jardin botanique de Montréal).

In each of these four museums, the chosen exhibits are presented in the same manner; the object is isolated from others and a card with its identification is provided. In the case of small objects like shells or navigation instruments, they are displayed as in a jeweller's window.

The two sets of data were collected in practically the same manner. Upon arrival at the museum, the researcher gives the visitor the following instructions.

"The purpose of this research is not to verify anything, not even what you can remember. It is meant to find out about your experience because as of now, almost nothing is known about it. Anything that you say is important. I would like you to be attentive, and to put your sensitivity, intelligence and imagination to work. I have worked here for a long time, I can no longer look with a fresh eye. As you walk along, I would like you to communicate to me what you see, what you think, and what you imagine."

The researcher follows the visitor at a comfortable distance and records his remarks on the tape recorder. Once the visit has ended, the visitor goes over the whole visit, describes his functioning by means of a projective instrument and a semi-structured interview. The visitor then describes how his visit to the museum has benefited him.

As one can see, all the material collected is oral. This material is typed and it is in its written form that it is examined. The study of the remarks made during the visit requires the development of a special instrument. The study of the comments based on the projective instrument and the interview is done by simple content analysis.

The instrument used to study the visitor's words as he observes objects is a series of twelve operations developed inductively from several readings of speech texts. The twelve operations are the following:

expressing

taking note of

identifying

evoking

contrasting-comparing

understanding

explaining-justifying

solving-modifying-suggesting

positioning oneself

verifying

assessing

This instrument also helps to identify the type of experience, affective or cognitive, present during the carrying out of the operation.

The instrument is extensive, it covers all the operations carried out by a visitor in the three types of museums mentioned above and it ensures an inter and intracoding reliability at least as high as that required in discourse analysis. However, the instrument's validity is still unknown, due to the lack of theoretical and empirical studies on the topic.

RESULTS

To illustrate the data collected, I will present a set gathered from 45 subjects who visited an exhibition of molluscs in a natural sciences museum. The molluscs were displayed as in a jeweller's window. I will briefly present data based on the general analysis of the psychological functioning of these 45 subjects. I will also present data based on a detailed analysis of one component of their functioning, i.e. their questions, and information pertaining to the interview on the benefits of their visit.

I will not describe these data for the purpose of theoretical or practical teaching, but to show the potential that the questions raised in this research and the instruments developed have

for future research. My interpretations are therefore limited and selective. Details and a synthesis, as well as the description of other data, can be found in a document that is in the process of being published.

General study of psychological functioning

Observation I

The use that the 45 visitors make of the 12 operations is as follows:

taking note of	represents	17.7%	of the operations
identifying	"	14.9%	"
explaining-justifying	"	13.2%	"
understanding	"	8.9%	"
verifying	"	8.1%	"
assessing	"	7.5%	"
associating	"	7.3%	"
evoking	"	6.7%	"
positioning oneself	"	5.1%	"
contrasting-comparing	"	4.6%	"
solving-modifying-suggesting	"	4.3%	"
expressing	"	1.7%	"

Observation II

If the 12 operations are regrouped according to their contribution to the processing of information, the following percentages are obtained. Expressing, taking note of and identifying which are operations associated with GETTING ACQUAINTED WITH OBJECTS represent 34.2% of the visitor's psychological functionning. Evoking, associating, contrasting-comparing, explaining-justifying and understanding, which deal with BUILDING ON WHAT HAS BEEN SEEN represent 40.7%. Verifying, assessing and positioning oneself which contribute to CONTROLLING PRODUCTION and solving-modifying-suggesting, to IMPROVING WHAT HAS BEEN CONSTRUCTED represent 20.7% and 4.4% respectively.

It could be said therefore that, when dealing with natural sciences objects presented separately and with a short identification, the visitor devotes most of his psychological functioning to building on and verifying what he observes instead of simply examining the objects that are in front of him. These findings are contrary to the belief that the jeweller's window format renders the visitor passive.

Observation III

The operations reveal the way in which the visitor handles his experience. But the latter has a nuance. It can either be affective or cognitive. As I mentioned earlier on, the instrument that we developed enables an understanding of this nuance. This point is illustrated in the following two discourse extracts: "I am aware that it is a mollusc" and "I am aware that I like it ". In both cases, the operation is an observation. But while the first one is based on cognitive material, the second is based on affective material.

The predominance of any one type of psychological functioning was studied based on all operations carried out by the 45 visitors. The results of this study are as follows. Cognitive functioning prevails during the carrying out of 84.6% of the operations and imaginary is clear in 21.3% of this 84.6%. On the other hand, affective functioning prevails in only 15.4% of the cases.

Natural sciences exhibits displayed in a jeweller's window format seem therefore to give rise more to cognitive functioning in the adult visitor than to affective functioning.

Observation IV

In general, the preceding data apply to all the 45 visitors regardless of their gender, age and even their level of education.It is only the museum visiting habits that seem to influence the type and the number of operations produced by these visitors. More precisely, this number produces an inverted U-shaped curve based on visiting habits.

My interpretation of these data is as follows. The fact that neither gender nor age has an impact on the production of operations is not surprising; there is no existing research that would prove the contrary. On the other hand, American and European studies indicate that the adult's level of education can have a significant impact on his attitude towards a work of art. It is true that, though attractive, the shells that were displayed could not be considered art objects by the subjects of this research.

Since differing education qualifications do not have an impact on the visitors' operations, the difference could be found in the wording of these operations. For example, the three visitors who say: "Look, that is a thorn shell", "Look, it is a murex", and "Look, that is the shell from which purple was extracted in ancient times", are all three making an observation, but the wording differs and refers back to different contexts; contexts which are "richer" and more complex in the

case of the second and the third visitor. Could it be that the last two observations were made by well educated visitors? This is a hypothesis for future research.

Finally, the inverted U-shaped curve depicting visitors' comments based on their museum visiting habits is not surprising. The one who often goes to a museum feels he is in a familiar environment and uses his potential to understand an object more easily than the visitor who rarely does. The former uses his potential mainly to develop and build on what he has seen. However, if the familiarity becomes excessive, as is the case with regular visitors, production falls probably, due to lack of interest in objects which are overtly familiar in the context of the exhibition.

The study of the visitor's questions

Like the school teacher, the museum educator believes that an active visitor is the one who asks questions. He believes that it is necessary to stimulate questions in the exhibit hall.

A question is an operation formulated in an interrogative way. A question can be classified as one of identification, explanation or verification. The material used to investigate the visitor's questions is therefore the same as the one used to study his operations: his discourse vis-à-vis the objects he looks at.

The following five points can be drawn from the study of the visitor's questions.

1. The visitor who asks himself a question knows that he has to answer it himself.
2. A question is asked when a person lacks information to continue with a cognitive activity he has undertaken. A question provides evidence, therefore, of an investment on the part of the visitor.

3. Most of the visitor's questions focus on properties of objects which are not overtly provided by the museum. Such questions are mainly meant to verify knowledge about the objects being looked at.
4. The number of questions decreases as the visit continues. And this decrease is characterized by an increased isolation of interrogative statements from those statements that precede them and follow them.
5. The above remarks do not seem to be affected by the visitors' socio-cultural characteristics.

On the whole, a question reflects some sort of a cognitive and emotional engagement, which gets blocked each time the visitor fails to find a reply in the exhibit hall; it is an investment that cannot be pursued, due to the lack of the conditions for doing so.

The display of exhibits used in this research did not make it easy to find answers on the spot. In my opinion, this particular type of display explains many of the phenomena reported earlier on, in particular: the importance that the visitor attaches to absent properties of objects that he looks at, the importance that he accords to the verification of his knowledge rather than to discovering the exhibits and , finally, the very fact that his questions decrease as the visit continues. Contrary to what is believed, when they go unanswered, the visitor's questions have a disturbing effect on his psychological functioning.

On the other hand, looking for an answer in a museum is not an easy thing because the visitor has to discover things for himself. He must therefore, without help, find an effective method, a relevant content, and reassurance that what he finds is correct. As can be seen, this is demanding and provoking.

Thus, if the visitor pursues his questioning, problems and anxiety lie ahead. If he gives up, he will experience frustration. Dealing with this aspect of his functioning is therefore very

delicate. The museum educator would be well advised to anticipate questions regarding his exhibits and should therefore be prepared to provide material that contains an answer.

The study of the benefits of a visit

Benefits are gains accrued after a visit and the well-being that goes along with these gains. In other words, they are the fruits of a visit and the satisfaction that it brings about. I studied these gains by analysing the content of the post-visit interview. The data presented thus reflect the perception of the visitor and not that of the researcher.

Benefits can be either general or specific. We talk of a general benefit when the visit becomes in itself a valid experience, nourishes the individual, or simply provides the individual with a good time. A specific benefit occurs when the visit gives rise to an intense functioning on the cognitive and affective level. This type of benefit is, by far, the one the visitor looks for.

Beneficial cognitive functioning is striking in its complexity. It consists of using one's imagination, opening oneself to new things, discovering rare, surprising, valuable or very little known objects, acquiring knowledge, improving or verifying it, reflecting, gaining a deeper understanding of the meaning of things. On the other hand, affective psychological functioning is simple. It is limited to experiencing emotion, enjoying good things and to having a feeling of curiosity.

To be beneficial, psychological functioning must also be playful. Here, to play obviously means to enjoy oneself, but mainly to tackle freely, lightly, without being preoccupied, that which individuals do in an exhibition hall. Most visitors hate the thought of having to learn at a museum as at school, in a serious and orderly manner.

The psychological functioning of the visitor is the source of a range of pleasures, provided that it is intense, that it can deal with or generate new ideas and that it remains playful. These pleasures read as follows

- esthetic pleasure resulting from the observation of beautiful and important objects;
- the pleasure of self discovery and of identifying oneself with what is beautiful, precious, rare;
- the pleasure of using one's intellectual abilities to imagine, to remember, to acquire knowledge, to go deeper, to think, and to modify one's ideas;
- the pleasure of easily overcoming a great difficulty;
- the pleasure of coming into contact with new things, of making them one's own or of having new ideas.

A closer look at these pleasures reveals that they form opposite pairs. The pleasure of contemplation and the pleasure of action. The pleasure based on manipulation of the external world and the pleasure of self-discovery. The pleasure which is achieved when one is fully attentive and the pleasure of overcoming a difficulty. The pleasure of the sensations and emotions and the pleasure based on intellectual activity. The pleasure of novelty and the comfort of habits.

Given the importance of pleasure in the visitor's experience, it is understandable that an adult should consider his own functioning as the greatest benefit of his visit and we can, by the same token, attribute to the quality of his psychological functioning the presence of what the ICOM (International Committee for Museums) refers to as delectation.

Does this apply to all categories of visitors regardless of gender, age, education or museum visiting habits? I cannot tell because the variety of reactions from one individual to another is so wide that it becomes difficult to see the differences that could exist between different groups of people.

PROSPECTS

Contrary to the expectations of museum educators, the data presented above lead us to believe that visitors are not passive when they look at natural science objects, even when these objects are displayed as they might be at the jeweller's. They also lead us to believe that the visitor's mental operations, when looking at objects, do not vary according to their level of education and that this functioning, even if it is cognitively and affectively intense, constitutes the major benefit of a visit by virtue of the multiple pleasures it brings about.

Though these data are new and interesting, they are not, however, the major contribution of the research I have described. The development of an approach and of an instrument which gives access to the psychological functioning of a visitor are, in my opinion, of greater importance. This approach and this instrument allow us, in fact, to understand the meaning of the visitor's activity. Thanks to them, we can know how the visitor proceeds to give meaning to the objects he looks at, his successes and failures in this endeavour, the role that his imagination and affectivity play, and the awareness which he has of his functioning and of his ability to manage it and get out of it that which he desires : pleasure.

The study of the variations in this activity is a necessary development towards its understanding: variations according to socio-cultural characteristics of the visitor, variations according to his expectations, but also according to the type of museum institution that he visits and variations with the type of display presented to him. Access to the visitor's psychological functioning thus opens up a whole area of research the results of which have multiple implications for the conception and assessment of exhibits or exhibitions.

This access likewise enables a renewal of the current predominant conception of adult education in the museum. What we have seen above suggests the following pattern. The visitor

is active. He constructs for himself the meaning of the objects he looks at and has pleasure doing it, as long as this endeavour is supported. As we can know how he proceeds, we know what aspect of his functioning requires support and which aspect constitutes an unexploited potential. We can therefore interact with the visitor's way of functioning, offer him what he needs to move ahead and introduce the wealth of knowledge accumulated by the museum wherever he can absorb it. Basing my arguments on a cognitive approach to the visitor's way of functioning, I propose, therefore, a constructivist, maximalist approach to adult education at the museum.